



# UNITED STATES PATENT AND TRADEMARK OFFICE

11A

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,030	12/02/2003	Dae Hong Kim	8733.937.00-US	2585
30827	7590	12/01/2006	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			CHUNG, DAVID Y	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 12/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/725,030

Applicant(s)

KIM ET AL.

Examiner

David Y. Chung

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-10, 12-14 and 16-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 2-10, 12-14 and 16-38 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

This application contains claims directed to the following patentably distinct species:

- I. Claims 2, 6-10 and 36, drawn to a liquid crystal display wherein the bump-shaped groove comprises a first portion which is as wide as the width of the gate bus line and a second portion which is narrower than the width of the gate bus line
- II. Claims 3 and 21-25, drawn to a liquid crystal display wherein the bump-shaped groove has a protruded portion such that the protruded portion narrows along its length
- III. Claims 4 and 26-30, drawn to a liquid crystal display wherein the bump-shaped groove comprises: a protruded portion of which the width is widest at an area in which the protrusion crosses the data bus line, is reduced as it goes towards both ends, and is coincident with the data bus line at both ends; and a small groove extending from the protrusion
- IV. Claims 5 and 31-35, drawn to a liquid crystal display wherein the bump-shaped groove has a protruded portion of which the width is greatest at a center of the data bus line and the width reduces as it goes toward both ends, the protruded portion having a length which is almost the same as that of the data bus line
- V. Claim 12, drawn to a liquid crystal display wherein the bump structure of the overlapped gate bus line is shaped in that a half of the width of the overlapped data

bus line overlaps the overall width of the gate bus line and the other half of the width of the overlapped data bus line overlaps a groove which is narrower than the width of the gate bus line

VI. Claims 13 and 37, drawn to a liquid crystal display wherein the data bus line overlapping the gate bus line at the bump-structured region of the gate bus line has stepped difference portions at different positions

VII. Claim 14, drawn to a liquid crystal display wherein the bump structure of the gate bus line is shaped such that the data bus line overlaps the overall width of the gate bus line at a center of the data bus line and overlaps a groove which is narrower than the width of the gate bus line at both sides of the data bus line overlapping the gate line

VIII. Claim 16, drawn to a liquid crystal display wherein the saw tooth structure formed in the gate bus line has apexes in a line parallel with the gate bus line

IX. Claim 17, drawn to a liquid crystal display wherein the saw tooth structure has apexes which are positioned in a recessed groove region that is smaller than the width of the gate bus line

X. Claims 18 and 38, drawn to a liquid crystal display wherein the saw tooth structure formed in the gate electrode and the gate bus line comprises at least two apexes

XI. Claims 19 and 20, drawn to a liquid crystal display wherein the non-linear structure comprises a first portion having a width of the second bus line and a second portion which is narrower than the width of the second bus line

The species are independent or distinct because the inventions as claimed have a materially different design and mode of operation. See MPEP § 806.05(j). Furthermore the inventions as claimed do not encompass overlapping subject matter and there is nothing of record to show them to be obvious variants.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claim appears generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Y. Chung whose telephone number is (571) 272-

Art Unit: 2871

2288. The examiner can normally be reached Monday thru Friday from 8:30 am to 5:00 pm. If successive attempts to contact the examiner are unsuccessful, the examiner's supervisor David C. Nelms can be reached at (571) 272-1787.



David Nelms  
Supervisory Patent Examiner  
Technology Center 2800